Request to Archive
With The National Centers for Environmental Information
For MTCSWA (Multi-Platform Tropical Cyclone Surface Wind Analysis)
Provided by OSPO

2011-09-14

This information will be used by NCEI to conduct an appraisal and make a decision on the request.

1. Who is the primary point of contact for this request?

Liqun Ma
NESDIS>OSDPD>OSPO
Physical Scientist
(301)763-8142 x196
liqun.ma@noaa.gov

2. Name the organization or group responsible for creating the dataset.

3. Provide an overview summarizing the scope of data you want to archive. Describe the outputs, data variables, including their measurement resolution and coverage.

The purpose of MTC-SWA is to provide a six-hourly, global, satellite-based estimates of tropical cyclone wind structure. The utility is to provide estimates for operations and opreational applications that require surface wind information. Estimates of this type are important input for guidance for ship avoidance areas, wind probabilties predictons and storm surge potential.

Special coverage: 900 km centered on the tropical cyclone
Special resolution: 4.5 km x 10 degrees azimuth.
Temporal resolution: 6-hour (0-6hr, 6-12hr, 12-18hr, 18-24hr)
The annual storage is dependent on the number of storms and their duration

Input:

The MTCSWA requires data from five sources, including
1) the current locations and intensity (for IR-based flight-level proxies) of any active TCs;
2) IR imagery centered on each of the TCs used to create IRWDs;
3) AMSU TC analyses from the NCEP AMSU tropical cyclone intensity and structure estimate (Demuth et al. 2004, 2006);
4) operational CDFT from NESDIS and the Naval Research Laboratory Monterey (NRLMRY); and
5) ASCAT ocean vector winds. These input data are updated by a series of scripts that are run on the cron on the OSDPD Satellite Environmental Processing System (SATEPS).

4. What is the time period covered by the dataset? (YYYY-MM-DD, YYYY-MM or YYYY)

From 2011-10-31
Ongoing as continuous updates to the data record

5. Edition or version number(s) of the dataset:

6. Describe the level to which the data are processed. For example, are these unprocessed raw observations, derived parameters, quality controlled or inter-calibrated data, etc.?
MTCSWA is a derived product. This product combines information from five data sources to create a mid-level (near 700 hPa) wind analysis using a variational approach described in Knaff and DeMaria (2006). The resulting mid-level winds are then adjusted to the surface applying a very simple single column approach. Over the ocean an adjustment factor is applied,
which is a function of radius from the center ranging from 0.9 to 0.7, and the winds are turned 20 degrees toward low pressure. Over land, the oceanic winds are reduced by an additional 20% and turned an additional 20 degrees toward low pressure.

7. Approximate date when the dataset was or will be released to the public:

8. Who are the expected users of the archived data? How will the archived data be used?
The Joint Typhoon Warning Center as well as other tropical cyclone warning Centers and tropical cyclone research scientist may use the archived MTCSWA data to study the features of the tropical cyclone.

9. Has the dataset undergone user evaluation and/or an independent review process? Did NCEI participate in design reviews?
MTC-SWA has received SPSRB support for operational distribution. Output of the analysis is being supplied to NCEP/NWS/NHC and DOD/JTWC for their use and evaluation. In addition, MTC-SWA validation studies vs. aircraft influenced best track tropical cyclone structure estimates were provided to these agencies. These data are also being used as input to real-time storm surge estimates; providing a different evaluation. The method has been documented in these references:

Knaff, J.A., and M. DeMaria, 2006: A Multi-platform Satellite Tropical Cyclone Wind Analysis System. AMS 14th Conference on Satellite Meteorology and Oceanography. 29 January-3 February, Atlanta, GA.

Knaff, J.A., A. Krautkramer, M. DeMaria, A.B. Schumacher, 2008: New and updated operational tropical cyclone wind products. 62nd Interdepartmental Hurricane Conference, 3-7 March, Charleston, SC.

A peer review journal article is being prepared.

10. Describe the dataset's relationship to other archived datasets, such as earlier versions or related source data. If this is a new version, how does it improve upon the previous version(s)?

11. List the input datasets and ancillary information used to produce the data.
NOAA-15, NOAA-16, NOAA-18 AMSU-A (soon Aqua, MetOp-A, and NOAA-19) (AMSU winds)
ASCAT (MetOp-A)
GOES-East, GOES-West, MeteoSat-9, MeteoSat-7, MTSAT (IR-based Flight-level proxy, cloud & feature track winds)

12. List web pages and other links that provide information on the data.
No. No Metadata standard in OSPO yet.

13. List the kinds of documents, metadata and code that are available for archiving. For example, data format specifications, user guides, algorithm documentation, metadata compliant with a standard such as ISO 19115, source code, platform/instrument metadata, data/process flow diagrams, etc.

1. MTC-SWA website: http://www.ssd.noaa.gov/PS/TROP/mtcswa.html
2. MTC-SWA Development website: http://rammb.cira.colostate.edu/products/mtc_swa/
3. MTC-SWA User Manual.doc
   MTC-SWA System Description Document.doc
   MTC-SWA System Maintenance Manual.doc
   MTC-SWA Interface Control Document.doc
   MTC-SWA Operations Manual.doc

14. Indicate the data file format(s).

1. ASCII
2. PNG
3. Binary

15. Are the data files compressed?

gzip

16. Provide details on how the files are named and how they are organized (e.g., file_name_pattern_YYYYMM.tar in monthly aggregations).

yyyyBBNN_MTCSWA_YYYYmmddHH.tar.gz

where
yyyy is the storm year
BB is the storm basin (AL,EP,CP,WP,IO,SH)
NN is the storm number
MTCSWA is the product name
YYYY is the year of the analysis
mm is the month of the analysis
dd is the day of the analysis
HH is the hour of the analysis.

17. Explain how to access sample data files and/or a file listing for previewing. If it is not available now, when will it be available?

ftp pull from OSDPD distribution server satepsdist1
or ftp from OSDPD anonymous ftp site:
ftp://satepsanone.nesdis.noaa.gov/MTCSWA/

18. What is the total data volume to be submitted?

Historic Data: all historic data or data submitted as a completed collection.

Total Data Volume: 0.72GB
Number of Data Files: 1

19. Are later updates, revisions or replacement files anticipated? If so, explain the conditions for submitting these additional data to the archive.

No additional updates, revisions or replacement data are anticipated.

20. Describe the server that will connect to the ingest server at NCEI for submitting the data.

Physical Location: Camp Springs, MD,20746
System Name: satepsdist1.
System Owner: NESDIS>OSDPD>OSPO
Additional Information: Add comments as needed on applicable data types, etc.

21. What are the possible methods for submitting the data to NCEI? Select all that apply.

1. FTP PULL
2. FTP PUSH

22. Identify how you would like NCEI to distribute the data. Web access support depends on the resources available for the dataset.

1. Direct HTTP/FTP

23. Will there be any distribution, usage, or other restrictions that apply to the data in the archive?

No known constraints apply to the data.

24. Discuss the rationale for archiving the dataset and the anticipated benefits. Mention any risks associated with not archiving the dataset at NCEI.

The MTC-SWA archive data meet the NOAA mission goal to serve society's need for weather and water information. MTC-SWA data provide a satellite-based estimate of tropical cyclone surface winds to weather forecasters, who use it along with modeling resources to predict the expected wind speeds and storm surge for land-falling tropical cyclones. Decision makers use this forecast information to determine disaster mitigation strategies. MTC-SWA is also used as an independent data source for comparison purposes in the experimental development of wind models.

25. Are the data archived at another facility or are there plans to do so? Please explain.

No

26. Is there an existing agreement or requirement driving this request to archive? Have you already contacted someone at NCEI?

MTC-SWA has been funded through a NESDIS PSDI (Product System Development and Implementation) project plan to develop an archive scheme and requirements.

27. Do you have a data management plan for your data?

No

28. Have funds been allocated to archive the data at NCEI?

MTC-SWA has been funded through a NESDIS PSDI (Product System Development and Implementation) project plan to develop an archive scheme and requirements.

29. Identify the affiliated research project, its sponsor, and any project/grant ID as applicable.

30. Is there a desired deadline for NCEI to archive and provide access to the data?

Archive by:
Accessible by:

31. Add any other pertinent information for this request.

For an active tropical cyclone the volume would be ~0.10GB per day. The annual storage is dependent on the number of storms and their duration. Given climatology the annual storage capability should not exceed 60 Gigabytes (100 storms * 6 days * 0.10GB).